
IN THE

United States Court of Appeals

For the Ninth Circuit

No. 21160

CERAMIC TILERS SUPPLY, INC., a corporation,
Appellant,
against

TILE COUNCIL OF AMERICA, INC., a corporation,
Appellee.

APPELLEE'S BRIEF

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APPELLEE'S BRIEF

Statement of the Case

Plaintiff recovered judgment (R 164-167) that claims numbered 1, 2, 4, 5, 6, 7, 8 and 9 of its '932 patent and claims 1, 2, 4, 5, 6, 7, 8, 9 and 10 of its '382 patent, each relating to a composition or technique for setting ceramic tile, are valid and infringed (R 164, 165) on a written Opinion of the District Court, Francis C. Whelan, District Judge (R 126-132), separately supported by Findings of Fact and Conclusions of Law (R 133-163).

Two patents are under consideration. U. S. Patent 3,934,932 issued May 3, 1960 upon an application filed Sep-

tember 30, 1957 by Dr. Herman B. Wagner. The second patent, U. S. 2,990,382, issued June 27, 1961, upon an application filed October 9, 1957 by Drs. Herman B. Wagner and John V. Fitzgerald. Both patents are directed to hydraulic cement containing mortars for dry-setting ceramic tile without the need for wetting down the substrate or the tile with water.

The Issues Presented

This is not, as defendant would like to have it, a contest over mortar "mixes" and "recipes", workman's variations in products long used and known. The subject matter is not of that caliber at all. Rather, the patents in suit are shown by the un rebutted proof to have provided, in a very old industry, entirely new products and methods which achieved new and unexpected results, which met and completely overcame problems long encountered, which went immediately and extensively into use, which displaced existing techniques, and which have been unanimously acclaimed by friend and foe alike in this litigation. The main issue on this appeal is whether, unlikely as it may seem, these products and methods were already available to the industry so that it is fair to invalidate the patents as having contributed nothing.

This issue is not to be decided by a mere tabular comparison of ingredients mentioned by coincidence in old and unrelated patents. The inquiry must be as to whether the prior art does in fact make the teaching which the industry adopted and found so valuable, for if the art does not do so, then it is fair to reward those who did make the contribution and it is the object of the patent law to do so.

“No doctrine of the patent law is better established than that a prior patent or other publication to be an anticipation must bear within its four corners adequate directions for the practice of the patent invalidated. If the earlier disclosure offers no more than a starting point for further experiments, if its teaching will sometimes succeed and sometimes fail, if it does not inform the art without more how to practice the new invention, it has not correspondingly enriched the store of common knowledge, and it is not an anticipation.”

Dewey & Almy Chemical Co. v. Mimex Co., 124 F.2d 986, 989 (2d Cir. 1942).

Defendant, understandably, seeks to avoid the record on commercial success on the ground that the prior art anticipates. It will appear, however, that the art is very far from teaching the inventions of the patents here, that the inventions do have novelty, and their ready acceptance by the industry is very pertinent, as has recently been held by the Supreme Court:

“Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.”

Graham v. John Deere Co., 383 U. S. 1, 17-18 (1966).

There is no issue raised by an alleged inattention of the court below to the prior art, as defendant contends. The plaintiff presented extensive expert testimony on the characteristics and features of the patented inventions and their comparison with the prior art. The defendant presented next to none. The defendant relied on some twenty-five (25) items of prior art, no one of which did it feel it could proceed without (1305-6, 1314).^{*} This in itself is indicative of the weakness of the art to invalidate. *Reynolds v. Whittin Mach. Works*, 167 F.2d 78, 83 (4th Cir. 1948). The court below found that the prior art did not teach the inventions (R 14, 15; Findings 42, 43), and concluded that the patents were valid thereover (R 26, 27, 28; Conclusions 21, 22, 23, 24, 25, 26, 27, 28).

Referring further to defendant's efforts to embellish the prior art in ways that do *not* raise issues on this appeal, defendant says in its brief that at various times during prosecution of the patents “* * * the Heijmer patent was in the background” (Brief, p. 27), and “the Patent Office lost sight of the ‘primary reference,’” Spillman (Brief, p. 29). Defendant must, of course, do what it can to discount the fact that the best references it can adduce were considered and rejected by the Patent Office, but it clearly cannot do so by assertions about the subjective state of the patent examiner which are supported by not a shred of evidence, and which are contrary to the plain record of the file history. The fact is that the art does not teach the inventions, and the Patent Office and court below both properly so decided.

^{*} Number references are to the Transcript, unless otherwise noted. “R” references are to the Record on Appeal.

Another false issue is the statement at page 7 of defendant's brief that the opinion of the court below was "totally silent" on the allegation of fraud on the Patent Office. The reason, of course, is that defendant made no reference whatever during the trial or in the full day of final argument to an alleged fraud which it now raises. Defendant did mention in the Pre-Trial Order some unspecified alleged transgression in the Patent Office (R 96). Nothing of this sort was ever argued, and the court below accordingly found as a fact that there was no irregularity in the prosecution of the patents (R 148, Finding 49). The issue now raised in the brief so little appealed to defendant that it did not even include it in its Statement of Points (R 188), but only added it to this appeal as an afterthought (R 194).

Summary of Argument

The inventions fully met needs long existent in the ceramic tile setting industry. They met with instant success and have been universally acclaimed by the industry.

The inventions are not taught or even suggested in any of the prior art. The British Spillman patent, on which defendant for the first time on this appeal places its main reliance for anticipation, should not even be considered against the '932 patent, defendant never having given the written notice thereof required by *35 U.S.C. §282*.

Even though Spillman were to be considered, it is ineffectual to invalidate. Spillman is concerned with a paint or plaster, a material entirely different from the tile holding

adhesives of the invention. The products are different, the problems are different, and Spillman fails to make the critical inventive teaching of Wagner for the very good reason that he was not aimed in the same direction at all. Spillman does not teach how to provide a very high viscosity in the water phase of a Portland cement adhesive for setting tile, and, not having done so, his miss is a mile from the Wagner invention. Spillman also, not directed to the Wagner product, contains different ingredients, such as a large percentage of chalk. This too renders Spillman ineffective to meet Wagner.

Spillman fails to meet the '382 patent mortar for the same reasons, and for the additional reason that it does not teach the use of the dry, redispersible polyvinyl acetate component, which in the Wagner product results in a synergistic effect with the methyl cellulose. Defendant's own expert testified to the difference between the dry, re-emulsifiable polyvinyl acetate of Wagner and the emulsion of Spillman.

Spillman fails to meet the standards for a reference the law requires of it as a foreign patent, and it is further ineffective because it teaches no more than the Heijmer patent, which was considered and rejected by the Patent Office.

The answer to defendant's argument of non-infringement is that the methyl hydroxypropyl cellulose used in its products is in fact the methyl cellulose described in the patents, but, in any event, the two are complete functional and legal equivalents of each other. Defendant's plea that

it is following the Kaveler prior art patent is disproved by the fact that defendant is not producing the Kaveler slurries for cementing oil wells, but is producing dry set, thin set mortars as taught by Wagner.

The cry of fraud falls because defendant's tortuous argument fails to include any misrepresentation whatever to the Patent Office.

Finally, the trial court was fully justified in permitting the Master to consider multiple damages because it was properly found that defendant deliberately copied its products from the plaintiff, and the false and deceitful testimony adduced at trial by defendant was inequitable conduct of the gravest sort.

Background of the Patents

The patents in suit are the product of the Research Center which the Tile Council of America maintains near Princeton, New Jersey (18). The Tile Council is a trade association with a membership of the ceramic tile manufacturers of the United States (11). The function of the Research Center is primarily to develop ways to reduce the installed cost of ceramic tile and to prepare product and installation specifications, all, of course, in order to promote the use of ceramic tile (18).

The research which led to the developments covered by the patents was undertaken in 1955 to meet the problems which were recognized in the use of then-existing materials to set ceramic tile (19). The success of the research was

quite dramatic. Entirely new ceramic tile-setting materials evolved which came to be known as "dry-set" mortars, and they were used in a new setting technique called the "thin-setting" of ceramic tile (18, 52, 53, 63-69, 93, 94).

Through its licensing committee, the new tile-setting materials were widely licensed to the industry by the Tile Council immediately after their development (21), they began to be manufactured in 1957 (382), and since that time they have achieved wide usage in industry, displacing earlier materials and methods and becoming the most prominent techniques for setting ceramic tile (161, 382, 383, 1397, 1434-35).

Ceramic Tile Setting Prior to the Inventions

The conventional ceramic tile-setting techniques in use in 1955 were the so-called "mud" method, and the use of organic adhesives, or mastics (19, 20, 73, 74, 79-83).

The "mud" installation involved the use of cementitious materials in several layers aggregating about an inch in thickness, which was heavy, slow and expensive to install. The first step was to water-soak the masonry backing, or substrate, then apply a scratch coat about one-fourth ($\frac{1}{4}$) inch thick made up of Portland cement, sand and lime. This was allowed to harden. The setting bed was next troweled on, allowed to harden, and then the "dope" coat was put on. This latter was a thin layer of "neat" or pure Portland cement, in which the ceramic tile is finally set. If the tile to be set were relatively water-absorbent, called the non-vitreous type of tile, the tiles themselves had to be thor-

oroughly water-soaked prior to setting in the cement. The necessity for water-soaking the masonry backing before applying the scratch coat, and for soaking absorptive tile before setting it in the mortar, is that otherwise water in the mortar mixture will be quickly sucked out and lost to the pores of the dry substrate or dry tile. In order for cement properly to set or cure and provide the strong bond desired, water must be available for chemical reaction with the cement. If this water is all or largely absorbed by the adjoining substrate or tile, the mortar does not cure, and a proper bond is not formed. The tile falls off. The mud method because of its weight could not be used at all to install tile on certain backings as, for instance, on a plywood wall (19, 35, 36, 38, 72, 73, 79-85).

A technique for setting ceramic tile newer than the mud method, coming into use some twenty (20) years ago, was that in which the tile was adhered to the substrate with an organic adhesive. These adhesives were made of rubber or rubber-type material which was milled with organic solvents and fillers, kneaded and masticated so that the rubber compound was swollen or semi-dissolved in the solvent. These adhesives were sometimes called "mastics" because of the masticating operation in their manufacture (1398).

The mastics provided a thinner and lighter setting bed than the mud bed, and did away with the need for water-soaking of tile and substrate. However, they brought some very serious problems of their own. The organic solvents used in them were both toxic and flammable, making their use hazardous to workman and property. They were hard to clean off from tile and other surfaces after an installation

was made, requiring the use of further toxic and flammable organic solvent to do the cleaning. They had only fair resistance to water, which limited their use in showers and other damp environments. They could not be used as a leveling medium. In laying tile, it is frequently desired to level-up a rough or low spot in the substrate with the adhesive, by applying a thicker coating in such places. With organic adhesive this could not be done, because the thicker bed of adhesive would not permit the solvent to evaporate, and the setting bed would never harden (19, 73-76, 79-83, 1395).

Other systems for setting tile were in use to a very minor extent at the time of the development of the Tile Council dry-set and thin-set mortars. These, like the mastics, were aimed at the problem of water loss from conventional cement to dry adjoining elements, which required soaking of substrate and tile in the mud technique. In one such system, liquid latex emulsion or similar additives were made to cement when preparing it for use, in order to inhibit loss of water. The trouble with these materials was that two entirely separate items, the dry adhesive and the liquid additive, must be manufactured, handled, stored, and mixed together by the workman at the site of the work (20, 382, R 137).

In another system, a sealing coat of liquid was applied to the substrate to prevent water loss from the mortar setting bed into it. This merely replaced a soaking step with a coating step requiring an additional material, in an already long, complicated and expensive process (20, 382, 1396).

The Patents in Suit

The inventor of the '932 patent in suit (2,934,932) is Dr. Herman B. Wagner, presently Professor of Chemistry at Drexel Institute in Philadelphia. He has his Bachelor's degree in Chemical Engineering, and his Master's and Doctor's degrees in Chemistry from Johns Hopkins University in Baltimore (51). He was employed by the Tile Council in 1955 to head the chemical research at the Research Center (52).

The '382 patent in suit (2,990,382) is the joint invention of Dr. Wagner and Dr. John Vincent Fitzgerald, the latter being the Research Director for the Tile Council since 1952. He is a PhD. in Physical Chemistry from M.I.T. (Ex. ZZ, p. 38).*

The '932 Patent

The key concept of the invention was realized when Dr. Wagner attacked the problem of water loss from cementitious tile-setting compositions. In the words of Dr. Wagner:

“* * * it occurred to me that with a dry absorbent tile, for example, the main cause of the soft joint or grout was the fact that when the older compositions containing cement and water first contacted the tile, the water would rapidly move into the dry tile and it would only be available for hardening for a very short and insufficient period.

“So the next step in my thinking process was, how can we prevent this flow of water into the absorbent

* Ex. references are to trial exhibits, unless otherwise noted.

tile? Well, a number of thoughts occurred, but the one that finally looked most promising to me was to increase the viscosity or consistency of the water that initially was put in with the cement to such an extent that this very thick viscous fluid now would not rapidly flow into the pores of the dry tile. It would remain behind, stay with the cement, and provide the proper hardening.” (60)

In order to accomplish his purpose, Dr. Wagner chose to use a water-soluble cellulose ether which could produce a tremendous increase in the viscosity of water:

“Now, in order to increase the viscosity of water we need something which is not only a large molecular weight or polymeric substance, but we need a polymer that is also soluble in water. It must dissolve in water. Most polymers are not soluble in water.

“If I take a polymer that is not soluble in water and put it in water, I do not effectively increase the viscosity of the water. It is only when I take a high molecular weight or polymer molecule that is capable also of dissolving in water that I have a tremendous increase in viscosity which would serve the purpose I was looking for here.” (62)

It is this concept which was principally responsible for the success of the invention, and it is this concept which is completely lacking in the prior art, as we shall show later.

The patent quite fully discloses this feature of the invention.

“This water-retentive property is obtained by causing the viscosity of the liquid phase obtained upon

water addition to the compositions to be sufficiently high so that no egress of the water to tile or substrate will occur or so that the rate of such water loss is greatly diminished. This effect of increased viscosity may be accomplished by adding to water any sufficiently water-soluble polymeric substance.” (Ex. 1, 2/50-58)*

A material disclosed to impart the important property of water-retention to the mortar was dry methyl cellulose powder of sufficient solubility to greatly raise the viscosity of the mortar water phase in use:

“I have found that given viscosity types of methyl cellulose, used in appropriate proportions to Portland cement and water, yield compositions that have the required water phase viscosity characteristics, do not flocculate the Portland cement, are not precipitated by constituents of the portland cement, and do not prevent hardening of the Portland cement. I have found that, in order to obtain the degree of water-retentivity required for this purpose, a minimum water-phase viscosity in the mortars of about 500 centipoises must be obtained and I have developed compositions of methyl cellulose, Portland cement, water, and other ingredients which meet these requirements and I have used, along with certain application techniques, to set ceramic tile.” (Ex. 1, 2/68-3/9)

Dr. Wagner's concept of the use of dry but highly soluble methyl cellulose capable of greatly raising the viscosity of the water phase permitted the preparation of an all-dry mortar which could be sacked and sold, and needed only water to be added for use when tile was to

* 2/50-58 refers to column 2, lines 50 to 58 of the '932 patent, Exhibit 1.

be set. This obviated the inconvenience and possibility of error inherent in the handling and measuring of several wet and dry materials at the job site. The highly viscous phase of the prepared mortar did not readily lose water to a dry substrate or to dry non-vitreous tile set in it. The need to soak substrate and tile with this mortar composition was thus entirely eliminated.

Still another feature of the invention covered by the '932 patent was the necessary inclusion of a grained substance such as sand or limestone in the composition:

“A particular feature of the invention is the development of improved compositions including ingredients as sand, limestone and the like and also the determination of the proper variations in composition that should be made in practical use to provide for workable mortars where only a relatively short slaking time can be allowed or where mixing and dispersion is of a degree common or practicable in actual field use.” (Ex. 1, 3/10-17)

A surprising and unlooked-for result in the use of sand or grained aggregate in the mortar composition was that the tile could be set directly on the substrate with the mortar, without the use of the neat or pure coat of cement between the tile and the setting mortar. This neat coat always had been used in the setting of tile with cementitious adhesives, but it proved to be entirely unnecessary with the new mortar (82, 83, 237, 579, 1402). The use of sand in the composition was found to be essential to the best use of the new adhesive in the setting of vitreous ceramic tile (1402).

The new mortar was utilized in a new and simplified technique for setting tile. The all-dry mortar composition was mixed with water and then applied directly to a dry substrate in a setting bed of only about $\frac{1}{8}$ to $\frac{1}{4}$ of an inch thickness, after which dry, unsoaked tile, whether vitreous or non-vitreous, was set in the bed, and the operation was complete.

Trial Exhibit 30-6 which is reproduced on the fold-out page, illustrates the vast simplification achieved with the new dry-set and thin-set mortar. Three (3) separate coatings of material and two (2) soaking operations were necessary in the mud method, with long waiting time, and heavy, thick and expensive material usage. With dry-set the mortar is directly troweled on the dry substrate, the dry tile is set, and that is the end of it (65-68).

Exhibit 30-4 illustrates another surprising result of the new mortar. Despite the great savings in materials and time for installation, the new mortar actually created a far stronger bond of the tile on the substrate (70, 71).

Exhibit 30-5 illustrates the savings in weight and materials realized, with the weight of mortar in the new technique amounting to only one-twelfth ($\frac{1}{12}$) of the conventional mud set method and lying in a bed only one-twelfth ($\frac{1}{12}$) as thick (72).

The new mortar also provided numerous advantages over organic adhesives, as shown in Exhibit 30-7. The new cementitious mortar was found to have far greater bond strength, its water resistance when set was excellent, yet

the job could be cleaned up with water, it was non-inflammable, it could be used for exterior tiling, and it could be used to level rough or low spots in the substrate (74-78),

All of these desirable and unforeseen characteristics of the patented mortar are unrebutted on the record, they were properly found as fact by the court below (R 137-139), and they are legally indicative of patentable invention.

Phillips Petroleum Co. v. Ladd, 219 F.Supp. 366, 369 (D. D. C., 1963).

The '382 Patent

The '382 patent covers an improved mortar of the kind disclosed in the '932 patent. In the words of Dr. Wagner:

“* * * the '382 mortar embraces all of the advantages of the earlier discussed mortar, plus the additional advantages of flexibility and further optimized bonding properties.” (94)

The mortar could be used for setting ceramic tile on plywood, whereas this ordinarily is considered to be too flexible to serve as a good backing (220).

The patent describes the invention as follows:

“It has been found that the foregoing objects may be realized by mixing in a dry state a hydraulic cement such, for example, as Portland cement, methyl cellulose of medium to high viscosity, and a water insoluble, reemulsifiable polyvinyl acetate. The resulting mix may then be combined with water to form a settable composition which forms a cement having

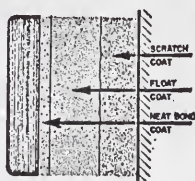
Ex.
30-6

INSTALLATION SIMPLIFIED



DRY-SET
ONE COAT

ACCEPTABLE ON WIDE RANGE OF BACKINGS



Conventional
THREE COATS

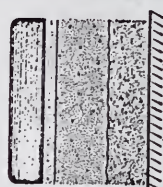
RESTRICTED ON BACKING SURFACES

Ex.
30-5

GREAT WEIGHT SAVINGS



DRY-SET
1/16" THICK: WEIGHT IS
3/4 LB. PER SQ. FT.



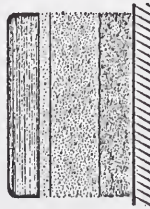
Conventional
3/4" THICK: WEIGHT IS
9 LBS. PER SQ. FT.

Ex.
30-4

GREATER BOND STRENGTH



DRY-SET
BOND STRENGTH
300-500 PSI



Conventional
BOND STRENGTH
50-250 PSI

Ex.
30-7

DRY-SET VS. ORGANIC ADHESIVES

	DRY-SET	ADHESIVE
CAN BE LEVELED	YES	NO
BOND STRENGTH	300-500 PSI	25-200 PSI
WATER RESISTANCE	EXCELLENT	FAIR
WATER CLEANABLE	YES	NO
NON-FLAMMABLE	YES	NO
IMPACT RESISTANCE	EXCELLENT	FAIR
EXTERIORS	YES	NO



unique dry curing properties and flexibility.” (Ex. 2, 2/37-43)

“In carrying out the principles of this invention in the manner indicated above, a single, all-powder cement-methyl cellulose-polyvinyl acetate mix is provided which can be delivered as such to the use-site, whereupon it can be practically and advantageously mixed with a specified amount of water to give a plastic, pliable composition having wide application of use” (Ex. 2, 3/17-24).

A surprising and unlooked-for result in this mortar was the fact that a synergistic effect took place between the methyl cellulose and the polyvinyl acetate with respect to the dry-setting properties of the composition. Such an effect is one in which the actual results realized from the combination of two (2) materials far exceed their individually added properties (229, 232). The effect is stated in the patent as follows:

“The overall dry curing properties, bonding properties and flexibility of the mortar compositions of this invention containing both methyl cellulose and polyvinyl acetate are far superior to cement compositions containing only methyl cellulose or polyvinyl acetate. Both methyl cellulose and polyvinyl acetate contribute to the dry curing properties of the resin.” (Ex. 2, 4/55-62)

The court below found on the un rebutted evidence the new characteristics and advantages of the '382 mortar (R 139). It also found the surprising and unlooked-for result of the synergistic effect (R 140), and this too is indicative of invention. *University of Illinois Foundation v. Block Drug Co.*, 241 F.2d 6, 12 (7th Cir. 1957).

A R G U M E N T

I. THE PATENTS ARE VALID.

A. Spillman is Not Available Against '932.

Defendant, never having asserted Spillman (Ex. J) against '932 below, is prohibited from doing so at this late date by the provisions of 35 U.S.C. §282.* Under that statute, defendant was required to give written notice to plaintiff "at least 30 days before trial" of any patents or publications intended to be relied upon as an "anticipation" or as "showing the state of the art" of the '932 patent.

The only written notice fitting the description of §282 ever received by plaintiff was defendant's "Memorandum of Contentions of Law and Fact"**, served June 11, 1963. In that written notice, however, Spillman British Patent 743,952 (Ex. J) was *not* asserted against '932, or ever pleaded as being in any way pertinent or relevant to the invention of that patent.† Nor did defendant ever ask the trier of fact for leave to adduce that reference as evidence of invalidity of the '932 invention.

Under §282, defendant cannot urge Spillman against '932 for the first time on appeal. *Blanchard v. Putnam*,

* Appendix, 3a-4a.

** The relevant pages, 15 to 18, of this Pleading are reproduced in Appendix, 8a-12a.

† Defendant's failure to plead Spillman against '932 was no oversight. In this same memorandum, page 18, British 743,952, which is Spillman (Ex. J), was cited against '382 as "illustrative of the prior art". Appendix, 12a.

75 U.S. 420, 427 (1869); *Thermo King Corp. v. White's Trucking Service, Inc.*, 292 F.2d 668 (1961). The traditional rule against raising points on appeal which were never heard below also bars defendant from asserting this completely new issue before this Court. *Hormel v. Helvering*, 312 U.S. 552 (1941); *Hebets v. Scott*, 152 F.2d 739 (9th Cir. 1945).

B. Spillman Does Not Invalidate.

Spillman is directed to a paint or plaster intended to be applied to a wall in a fluid condition and to dry upon exposure to air to form a decorative surface coating whose primary function is to be aesthetically pleasing.

In contrast, the dry-set Portland cement mortars of the patents in suit have a structural—not an aesthetic function. They must tenaciously bond together in the dry state two essentially different types of building materials, i.e., ceramic tile pieces, including highly absorptive non-vitreous and non-absorptive vitreous tile, and any one of a wide variety of highly absorptive building foundation substrata, such as concrete, plaster, gypsum wallboard, wood, and the like.

Prior to the patents in suit, there was no known hydraulic cement mortar which would perform this function, and hence the tile art had to resort to wetting down the building foundation and tile with the many consequent disadvantages of such a technique, discussed *supra*.

The test of anticipation here is whether a man grappling with the problems solved by the patents in suit

and having no knowledge of the patents, but having the Spillman patent in his hand, would have said: "*That gives me what I wish.*"**

Spillman fails this test.

Spillman is not concerned with the loss of water from a tile mortar to an absorbent substratum or the tile itself. He does not teach the Wagner concept of utilizing a water-soluble polymeric material to increase the viscosity of the water phase of such a mortar to thereby prevent egress of the water out of the mortar into the surrounding environment. He does not disclose a unitary dry composition readily activatable at the job site by the mere addition of water to produce a mortar having such a water-retentivity characteristic, and which is further capable of forming a strong bond between all available ceramic tile and building substrata.

Spillman, in other words, contains no recognition of the problems faced by the tile setting art on the eve of the inventions and affords no solution to those problems. It is not enough for defendant to contend that Spillman can be made to produce one result or another. For anticipation, Spillman's specification must give in substance the same knowledge and same directions as the patents in suit. "Inferences as distinguished from disclosures, especially when drawn in the light of after events, cannot be asserted as a basis of anticipation."***

* *Skelly Oil Co. v. Universal Oil Products, Co.*, 31 F.2d 427, 431 (3rd Cir. 1929).

***Id.*

1. Spillman does not teach the use of methyl cellulose to increase viscosity.

When water is added to the unitary, dry compositions of the patents, the methyl cellulose dissolves and increases the viscosity of the water tremendously, thereby imparting to the mortar the crucial property of water-retentivity.

Methyl cellulose which is not capable of increasing the viscosity of water would result in a bond failure between tile and building foundation, a truly catastrophic event should it occur in a modern building of any size.

Dr. Wagner achieved the property of water-retentivity in his mortars by the use of given types of methyl cellulose which are not only soluble in water but, more importantly, are capable of raising the viscosity of water tremendously.

This feature of the methyl cellulose component of the mortar of the patents is brought out, for example, in the '932 patent claims, wherein it is stated that the methyl cellulose is of 10 to 7,000 centipoise viscosity grade. Dr. Lacey* explained that the viscosity of pure water is 1 centipoise (1343). From the testimony of Dr. Wagner (103-105), this claim limitation means that the methyl cel-

* Plaintiff's expert, Dr. Lacey, received the Degree of Doctor of Philosophy from the University of California at Berkley in 1913, had a long and varied teaching career at the California Institute of Technology, where he served as Professor of Chemical Engineering, Dean of Graduate Study, and Dean of Faculty, and is currently professor emeritus in chemical engineering. He has served as a member and Vice President of the California State Board of Registration for Civil and Professional Engineers, and has received many awards for outstanding academic and professional achievements (239-240).

lulose, when dissolved in water to a concentration of 2%, must have the capability of increasing the viscosity of the water at least 10 times! A more stringent viscosity increasing capability for methyl cellulose is required by the claims of the '382 patent.

Methyl cellulose having the viscosity rating called for by the patents must possess two essential characteristics: (1) it must have a degree of substitution between 1 and 2 so as to provide good water solubility*; and (2) it must have a cellulose molecule chain,** long enough to increase the viscosity of water the stated amount upon dissolution therein.

The viscosity rating (e.g., 10 centipoise methyl cellulose) as used in the patents, in other words, is a shorthand expression which describes these two highly complex scientific characteristics of a particular type of methyl cellulose which can be used to practice the patented inventions.

Neither the term "viscosity" nor the concept of water-retentivity is found in Spillman. Nor does Spillman describe either the degree of substitution or the chain length of his "methyl cellulose".

* "Cellulose itself is essentially water insoluble. But as you put more and more of the methoxy groups in you develop more and more water solubility, and you get fairly good water solubility between one and two substitutions out of a possible three" (Lacey, 303).

** "I might say that the length of the molecule in the methyl cellulose depends largely on the length of the molecule of cellulose on which it is built, and the viscosity of the methyl cellulose depends very largely on the length of these chains, whether they are short chains or very long chains, and the treatment of the original cellulose in purification has a great deal to do with the resultant length of these chains, whether they are broken down into smaller ones or kept as quite long chains" (Lacey, 302).

The problem with Spillman as an anticipation therefore is not what he actually discloses, *but rather what he fails to disclose*. *Dewey & Almy Chemical Co. v. Mimex Co.*, 124 F.2d 986, 990 (2nd Cir. 1942). Protestations of counsel are not sufficient to cure these disclosure failures, which are fatal.

The mere fact that Spillman mentions an “aqueous solution of methyl cellulose” is no help to defendant.

The term “solubility” as applied to cellulose ethers is a complex phenomenon which has many different shades of meanings as testified to by defendant’s expert, Dr. Stone.* Dr. Wagner, recognizing this fact, did not leave this critical property open to argument or interpretation when he prepared his patent applications. To the contrary, he specified the viscosity rating for the methyl cellulose, and thereby definitely defined the degree of solubility necessary to produce the required degree of water-retentivity in his mortars.

The complete failure of Spillman to take even the most elementary precaution to state a viscosity rating for his methyl cellulose or to describe a degree of substitution

* “Well, solubility is not a simple phenomenon, particularly when one is dealing with colloid chemistry. It becomes a rather moot point and subject to some discussion among chemists what constitutes solubility and what does not constitute solubility—particularly with materials of this type.

“For example, if you take methyl cellulose, simple methyl cellulose with a degree of substitution of approximately 1, you can dissolve it in water at room temperature. But as you start to raise the temperature the material gels the solution. Now, at that point a colloid chemical phenomenon is taking place, a physical change is taking place; and chemists would argue, well, is the material still soluble or is it not at that point.” (Stone, 795)

or a chain length for his material, or to define in any other way what he intended by the phrase "aqueous solution of methyl cellulose" speaks louder than words. Since Spillman was not aiming at the target of the patents, he did not require methyl cellulose which is capable of increasing water viscosity. To Spillman, in other words, methyl cellulose viscosity was a matter of complete indifference.

Heijmer (Ex. F) and Kaveler (Ex. P) were the two primary references asserted by defendant at trial, but dropped on appeal. Understandably so, since both refute defendant's contention that when Spillman says "aqueous solution of methyl cellulose" he intends a methyl cellulose having the chain length and degree of substitution required to provide the viscosity taught by the patents in suit.

Heijmer, like Spillman, covers a plaster which is stated to contain a "water soluble methyl or ethyl cellulose" (Ex. F, 1/70). In Example 2, however, Heijmer refers to a "water suspension of ethyl cellulose", thus recognizing that ethyl cellulose is not soluble in water, as testified to by two of defendant's witnesses (Stone, 797, and Knesel, 150), and two of plaintiff's witnesses (Wagner, 1400, and Lacey, 375).

Since Heijmer teaches "water soluble methyl and ethyl cellulose" to be equivalents in his plasters, however, he necessarily establishes the use in plasters of a methyl cellulose which is the equivalent of ethyl cellulose, and therefore water insoluble, and therefore not capable of increasing viscosity.

Both Dr. Lacey (1375) and Dr. Wagner (62) testified that water insoluble cellulose ethers such as ethyl cellulose would not work in the dry-set mortars of the patents.

Dr. Stone, defendant's expert, testified that water insoluble cellulose ethers such as ethyl cellulose "swell up" on addition to water and therefore could conceivably be used in dry-set mortar. He, however, had never actually made such a product, and conceded in the same breath that "the further the cellulose ethers are removed from water solubility, the less desirable they become as thin-set mortar components" (832).

In any event, the record is clear that insoluble ethers such as ethyl cellulose would certainly not have the tremendous viscosity increasing capacity called for by the claims of the patents, so that even were mortars made from such an ether, they would not have the water-retentivity properties of the patented compositions.

Kaveler (Ex. P) is directed to an oil well cement comprising Portland cement in combination with "cellulose ethers" of the "methyl cellulose" type.

At column 4, lines 23-25, Kaveler states that the viscosity of a "1% aqueous solution" of his ether is 1 centipoise at 20° C. This means that the cellulose ether in the "1% aqueous solution" referred to by Kaveler did not change the viscosity of the water at all (1343).

But Kaveler's expression "aqueous solution" as a description of his cellulose ethers is identical to Spillman's expression "aqueous solution" for his "methyl cellulose".

Here then is further evidence, if any is needed, that Spillman's mere mention of an "aqueous solution" of methyl cellulose is not a teaching that there is present in the "aqueous solution" a "methyl cellulose" having the viscosity properties taught by the patents.

Mere words which teach the art nothing about the product and do not put anyone in possession of the invention cannot be an anticipation. *Phillips Petroleum Co. v. Ladd*, 219 F. Supp. 366 (D.D.C., 1963).

2. Inoperative varieties of methyl cellulose exist and are available.

The existence of many varieties of methyl cellulose which would not be operative to practice the inventions of the patents has been demonstrated, *supra*.

Defendant's contention that all methyl cellulose fits the description given by the patents in suit, accordingly, is simply not true.

On page 2 of Greminger Deposition Ex. 6*, Methocel AS is offered for sale in the United States by the Dow Chemical Company. It is described as a methyl cellulose which "is not water soluble". It has already been shown that methyl cellulose which is not water soluble would not have the viscosity taught by the patents. Thus, the record is also *contra* defendant's contention that methyl cellulose which does not fit the description of the patents is not commercially available.

In its Brief (pp. 16-18) defendant quotes Dr. Wagner out of context in an attempt to prove its point.

* A brochure of the Dow Chemical Company entitled "The New Methocel Powdered Dow Methylcellulose".

A review of this testimony, however, proves the contrary.

At page 105, Dr. Wagner was asked:

“Q. And you can, I take it, order from the manufacturer methyl cellulose of a given viscosity. Is that so?”

Dr. Wagner answered this question as follows at 105-106:

“A. Yes. You may specify any one of a number of different viscosity types or grades when you place an order.

“Q. As to the ones they offer you, you can.

“A. Out of the ones that they offer. And I might cite typical steps.

“Q. Yes, would you, please.

“A. There is a 10-centipoise type. There is a 25-centipoise type. There is a 50-centipoise type. There is a 150-centipoise type; a 400-centipoise type; a 1,500-centipoise type; a 4,000; a 6,000; a 7,000; and more recently I think there have been introduced 13,000-centipoise types.”

Thus, when Dr. Wagner gave the viscosity grades of methyl cellulose, he was testifying not as to all types of methyl cellulose that were commercially available, but only to the viscosity graded methyl cellulose that he would order to manufacture the mortars described in his patents.

Immediately before the testimony quoted *supra*, Dr. Wagner clarified this entire point for the trier of fact at 105:

“In other cases, for uses outside of our discussion, and other very important technical uses, you want not

so much to increase viscosity, but you want some chemical activity for dispersing powers or whatever, and then there you don't care about the viscosity.'*

Hence, the record is exactly opposite to defendant's contention that the only methyl cellulose available is that described in the patents in suit.

In any event, the test of anticipation here is not what methyl cellulose is or was available, but whether Spillman "teaches methyl cellulose" which must have the viscosity properties taught by the patents. *Andrews v. Wickenden*, 194 F.2d 729, 732 (CCPA 1952). Spillman misses the target. Again he fails the test.

3. Spillman's plaster does not "consist essentially of" the three ingredients specified in the '932 claims.

Claim 1 is typical of the '932 patent. It specifies that the dry composition "consists essentially of" three recited ingredients, namely, 24.8 to 89.8% Portland cement, 0.2 to 6.5% methyl cellulose of 10 to 7,000 centipoise viscosity grade, and about 10 to 75% of at least one substance selected from the group consisting of sand and powdered limestone. The claim further specifies that the dry composition is adapted to be mixed with about 11 to 40% of its weight of water.

The phrase "consists essentially of" is a word of art in patent claims. As was held by the Board of Appeals in *Ex*

* This testimony of Dr. Wagner serves to explain a function of Spillman's methyl cellulose, i.e., it serves as a dispersing agent for polyvinyl acetate. Methyl cellulose is conventionally utilized as an emulsifier or dispersing agent to maintain polyvinyl esters such as polyvinyl acetate in an emulsified state. See Ex. ZZ, page 21. The ratio of methyl cellulose to polyvinyl acetate in the Spillman plasters approximates that ordinarily present in polyvinyl acetate emulsions.

parte Davis & Tuukkanen, 80 U.S.P.Q. 448 (P.O. Bd. App. 1949):

“Recital of ‘essentially’ along with ‘consisting’ renders the claim open only for ingredients which do not materially affect the basic and novel characteristics of the composition.”

* * *

“In the present case where the claims recite three ingredients and the reference discloses four, the important question is whether the term ‘consisting essentially of’ excludes that fourth ingredient. We think that it does, since the ‘modifier’ materially changes the fundamental character of the three-ingredient composition of claims 13, 14 and 16. * * * we are influenced by the facts that the construction of the term ‘consisting essentially of’ quoted hereinbefore from the code of the Primary Examiners suits the situation in this case and also that numerous patents have issued using the term in reliance upon the meaning given it in the said code.”

Spillman, in addition to Portland cement, “methyl cellulose” of unspecified type, and sand, contains 17.3% by weight of “pulverized chalk whiting” a truly enormous amount of an extraneous “fourth” ingredient not called for by the claims of '932, and therefore excluded by the very terms of the claims.

Further, “chalk” in such amounts is not intended for use in the tile setting mortars of the '932 patent (Ex. AB, p. 25, line 24).*

* This statement was made with reference to Heijmer (Ex. F), which according to Defendant's Ex. BK, contains 21% by weight of suspended chalk, or substantially the same amount of pulverized chalk whiting called for by Spillman (Ex. J). See discussion, *infra*, page 54.

The reason is clear.

A "pulverized chalk whiting" or "suspended chalk" if present in the mortars of '932 in the amount called for by Spillman (or Heijmer) would interfere with bond strength and change the fundamental character of the three ingredient composition of the '932 claims. As such, its presence in Spillman obviates anticipation under the doctrine of *Ex parte Davis & Tuukkanen, supra*.

4. Spillman does not teach the dry, re-emulsifiable polyvinyl acetate of '382.

Spillman mixes an aqueous suspension or emulsion of polyvinyl acetate with a solid filler portion to produce a paint or plaster. The '382 claims require the presence in the tile mortar composition of dry, re-emulsifiable polyvinyl acetate. The distinction between these two completely different types of polyvinyl acetate is clearly brought out in the '382 patent itself (Ex. 2, 1/62 to 2/10).

Dr. Wagner was partly responsible for the development of the dry, re-emulsifiable polyvinyl acetate necessary for the success of the '382 composition (226) and particularly described by Morrison (Ex. G), a patent cited in the specification of '382 (Ex. 2, 3/48). In the compositions of the '382 patent there is synergism between the dry, water insoluble, re-emulsifiable polyvinyl acetate and the water-soluble methyl cellulose of 80 to 6,000 centipoise viscosity to produce unexpectedly enhanced dry-setting properties for the mortars containing this combination of ingredients (231, 232), in addition to flexibility.

Synergism is defined as “* * * cooperative action of discrete agencies such that the total effect is greater than the sum of the two effects taken independently.” *In re Davis & Murdock*, 134 U.S.P.Q. 257, 259 (CCPA 1962).

The fact of synergism is evidence of invention in compositions of matter comprising a plurality of old materials. *Ex parte Abramson*, 72 U.S.P.Q. 239 (P.O.Bd. App. 1947); *Rystan v. Warren-Teed Products Co., Inc.*, 92 U.S.P.Q. 419 (N.D. Tex., 1952).

“Plaintiff contends in any event that the Wach claims are valid even in the absence of proof of ‘synergistic action,’ while defendants argue to the contrary. Numerous cases are cited and discussed as bearing upon this argument. There is no occasion, however, to enter this discussion because we are of the view that the finding that ‘synergistic action’ was shown is clearly supported.”

University of Illinois Foundation v. Block Drug Co., 241 F.2d 6, 12 (7th Cir. 1957).

Defendant contends that there is no difference between the dry, re-emulsifiable polyvinyl acetate of the '382 patent and the emulsion of Spillman. Dr. Stone, its own expert, testified to the contrary:

“But there are other applications in which it is not practical to handle reemulsified materials; in other words, they do not perform as well. I think, for example, in the paint area, if you were to take a vinyl acetate latex that is used in paint and spray-dry it and sell this as a product, the quality of the paint surface would suffer by rewetting this later on, and this is why paints are sold bulk-wet.” (815-816)

Defendant has introduced no evidence to rebut this testimony or to show that an emulsion of polyvinyl acetate would produce the same or a similar synergistic result as does the dry, re-emulsifiable polyvinyl acetate in the mortars of '382. Absent such showings, defendant's arguments on this point amount to mere protestations of counsel, and should be ignored.

5. Spillman does not anticipate the inventions or render them obvious.

As brought out, there exist many distinctions between the inventions and Spillman. At least two important differences are conceded in defendant's Brief (p. 15). Therefore, there is no anticipation under 35 U.S.C. §102,* which requires that the reference must disclose *all* the elements of the claimed combination, or their mechanical equivalents, functioning in substantially the same way to produce substantially the same result. *Williams Iron Works Co. v. Hughes Tool Co.*, 109 F.2d 500 (10th Cir. 1940).

Here then the pivotal law around which the question of invention must center is §103.**

The 196^b~~7~~ decisions† of the United States Supreme Court on the application of the rule of "obviousness" under 35 U.S.C. §103 demonstrate that the present invention more than meet the tests of the law. Those tests were expressed by Judge Learned Hand in *Reiner v. I. Leon Co.*, 285 F.2d

* Appendix, 2a-3a.

** Appendix, 4a.

† *Graham v. John Deere Co.*, 383 U. S. 1, 35-36; *United States v. Adams*, 383 U. S. 39.

501, 504 (2d Cir. 1960) (cited with approval by the Supreme Court in *Graham v. John Deere Co.*^{*}):

“There are indeed some sign posts: e.g. how long did the need exist; how many tried to find the way; how long did the surrounding and accessory arts disclose the means; how immediately was the invention recognized as an answer by those who use the new variant? In the case at bar the answers to these questions all favor the conclusion that it demanded more intuition than was possessed by the ‘ordinary’ workers in the field.”

Here, too, all of these sign posts lead to the conclusion that the present inventions required more than ordinary skill.

The findings of the lower court on lack of anticipation and non-obviousness were made against a highly complex background of technical facts. Under Rule 52(d), F.R.C.P., this Court is bound by the findings of the court below on technical facts unless those findings are clearly erroneous. *Wahl v. Carrier Mfg. Co.*, 358 F.2d 1 (7th Cir. 1966).

6. Spillman does not teach the gist of the inventions.

Defendant in its Brief seeks to divert attention from the substance of the highly meritorious inventions of the patents and the fatal deficiencies in the prior art by playing a numbers game. It argues that, mathematically speaking, certain ingredients specified by the Spillman patent are present in amounts which fall within the quantitative range limits for ingredients recited in the claims.

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* 383 U. S. 1, 36 (1966).

As has been established, Spillman is fatally defective as an anticipatory reference for a variety of reasons, paramount among which is the simple fact that it does not teach the use of “methyl cellulose” component which is capable of increasing the viscosity of water, or the achievement of a water-retentivity property in its paints or plasters. Absent a disclosure of such teachings, which are crucial to the patented inventions, Spillman cannot be seriously considered as an anticipation of the dry-set grouts and mortars which have revolutionized the ceramic tile setting art.

The mere fact that a mathematician can twist and turn Spillman’s ingredients until they approach the numerical ranges of the patent claims is irrelevant, since Spillman does not teach the gist of the inventions.

“* * * We find in the Draeger opinion what we consider the key to determining whether a disclosure supports a claim * * * viz., does the disclosure *teach the gist of the invention* defined by the claims?

While we realize that all limitations of a claim must be considered in deciding what invention is defined, it is futile merely to compare quantitatively range limits and numbers set out in counts with range limits and numbers disclosed in allegedly supporting specification. Closer scrutiny is required to get at the essence of what invention the count purports to define (emphasis the court’s) * * *

Hall v. Taylor, 332 F.2d 844, 848 (CCPA 1964).

7. The best prior art was considered and rejected by the Patent Office.

The best prior art was considered by the Patent Office and the patents allowed thereover.

The Heijmer (Ex. F) plaster is the full equivalent of Spillman's. Since the Examiner considered Heijmer and allowed '932 thereover,* it can be stated that he also considered the substance of the teachings of Spillman and allowed the '932 patent over such teachings also.

Similarly, the Spillman Australian Patent 166,566 (Ex. 73), which for the most part is similar to the British Spillman patent (Ex. J) [1301], was considered by the Examiner during the prosecution of the '382 patent,** and held not to be a bar.

“The presumption of validity of a patent is enhanced where best prior art was considered by the Patent Office and resolved in favor of applicant.”

National Sponge Cushion Co. v. Rubber Corp. of Cal., 286 F.2d 731, 735 (9th Cir. 1961).

“While we have focused attention on the appropriate standard to be applied by the courts, it must be remembered that the primary responsibility for sifting out unpatentable material lies in the Patent Office.”

Graham v. John Deere Co., 383 U. S. 1, 18 (1966).

* Heijmer (Ex. F), which is U. S. Patent 2,700,615, was a file wrapper reference against '932. See Ex. 1, 8/35.

** Ex. 2, 8/8, Ex. ZZ, p. 19.

8. Spillman is a foreign patent and must be strictly construed.

Spillman, the only reference which defendant now claims invalidates the inventions in suit, is a foreign patent. Under the law of this Court, it must be strictly construed.

“A foreign patent is to be measured as anticipatory, not by what might have been made out of it, but by what is clearly and definitely expressed in it. An American patent is not anticipated by a prior foreign patent, unless the latter exhibits the invention in such full, clear, and exact terms as to enable any person skilled in the art to practice it *without the necessity of making experiments* * * *.” (Emphasis supplied.)

Carson v. American Smelting & Refining Co., 4 F.2d 463, 465 (9th Cir. 1925).

The soundness of this rule was recently re-evaluated and adhered to. *Pursche v. Atlas Scraper & Engr. Co.*, 300 F.2d 467, 477 (9th Cir. 1961).

9. The process claims of '932 define new, useful and patentable methods.

Claims 8 and 9 of '932 are directed to the method of installing ceramic tile utilizing the new and improved compositions set forth in the composition claims and containing Portland cement, methyl cellulose of 10 to 7,000 centipoise viscosity grade and sand or limestone.

The revolutionary impact of the dry-set method of installing tile described by these method claims is highlighted, *infra*, and was emphasized by the trial court in its Findings (Findings of Fact, 24 and 27, R. 140-141).

One of the bases for defendant's assertion that the method claims are invalid is Ex. Y, which is a publication by the plaintiff entitled "Genuine Clay Tile." That reference, however, teaches not *dry-setting* of tile, but a modification of the conventional *wet-setting* "mud" technique described above. Page 17 of Ex. Y contains explicit instructions for wetting down both the substrata and the tile themselves.*

The admissions referred to in defendant's Brief, pp. 22-23, each relate to the installation of tile by so-called organic mastics. These materials bear no similarity at all to Portland cement mortars. As found by the trial court:

"Organic adhesives had the drawbacks that they contained toxic and flammable solvents, they were not durable, they were hard to clean, and they had only fair resistance to water. [19, 73, 74, 75, 76, 78] Also, organic adhesives could not be used in thick enough layers to serve as a leveling medium, because the adhesive would not dry properly." (Findings of Fact, 15, R. 137)

Defendant contends that in considering the patentability of the process claims of '932, the Court must strip away all considerations of the composition and base its decisions

* "J1. THIN PORTLAND CEMENT MORTAR SETTING BED—Mix mortar by volume in the proportions of one part Portland cement; one-half to one part hydrated lime; and four to seven parts sand. *Immediately prior to applying the mortar setting bed wet (evenly but do not saturate) the surface to which the setting bed is to be applied*" (emphasis supplied).

* * *

"J2. SOAKING TILE FOR PORTLAND CEMENT BEDS—Immerse absorptive unmounted Tile until saturated in advance of laying so that they will not steal moisture from the mortar and result in a weak bond." [Ex. Y, p. 17]

solely upon the remaining process steps. This is simply not the law. As stated by the Commissioner of Patents in *Ex parte Wagner*, 1951 C.D. 3, 8:

“Many processes which are old in a procedural sense becomes new when, by the use of a different agent, a new result is accomplished”.

Here, the use of plaintiff's mortar compositions produces a completely new result—the ability to dry-set ceramic tile (i.e., set without the necessity of wetting down the substrate and/or tile with water) with an inexpensive Portland cement containing composition. Such a result was heretofore not possible. In the face of this record, it is ludicrous to maintain, as does defendant, that the patentability of this highly meritorious and revolutionary tile installing technique is negated by the fact that tile had been set with organic mastics mixed with organic solvents in the absence of water. Such mastic compositions are simply not analogous to the dry-set Portland cement compositions recited in the method claims of '932.

The second string to defendant's bow on these method claims also turns up out of tune. According to it, the process claims of '932 are not patentable if the composition recited in those claims are old.

The law is *contra*.

Section 100(b) of Title 35 U. S. C.* provides:

“The term ‘process’ * * * includes a new use of a known * * * composition of matter or material.”

* 35 U. S. C. §100(b) [1952]. Appendix, 2a.

Thus, defendant's argument to the effect that the method claims can only be patentable if they recite a new material cannot be sustained in the face of the express provisions of Section 100(b).

“The language used in Section 100(b) to define what is meant by the term ‘process’ is explicit here. It, in our opinion, clearly indicates that it was the intent of Congress to authorize the grant of a patent for a new use, subject of course to the conditions and requirements of the act * * *, when such use is claimed in the form of a process, act or method * * *”.

Ex parte Griffin, 106 U.S.P.Q. 388 (P.O. Bd. App. 1953).

That a new use of an old composition of matter may be patentable as a method was also established by the Fourth Circuit in *Rohm & Haas Co. v. Roberts Chemicals*, 245 F.2d 693, 699 (4th Cir. 1957).

Of course, the mortar compositions recited in method claims 8-9 are specifically new, as has already been demonstrated. But plaintiff is not prejudiced by that fact. To the contrary, since under Section 100(b), a new use of an *old* composition of matter is clearly patentable, it must necessarily follow that a new use for a *new* composition is also patentable under that section.

Thus, regardless of whether the compositions of '932 are new or old, the method claims of '932 are patentable over Graf (Ex. Y), the only reference asserted against these claims, and over the prior art organic mastic technique for the installation of tile.

Where the method satisfies an old and recognized want, invention will be inferred rather than the exercise of

mechanical skill. *Kaakinen v. Peelers Co.*, 301 F.2d 170, 173 (9th Cir. 1962).

10. The method claims of '382 are patentable.

The method claims of the '382 patent constitute a description in process terms of the same invention which is described by other claims in terms of composition of matter. Since 35 U. S. C. §101* clearly provides statutory basis for both "process" and "composition of matter" inventions, such claims are clearly proper, where, as here, they appear in a single patent with the composition claims. *In re Conover*, 134 U.S.P.Q. 238 (CCPA 1962); *Ex parte Bartelson, Breneman and MacAdam*, 151 U.S.P.Q. 59 (P.O. Bd. App. 1966).

11. The inventions satisfied long-felt and unsolved needs and met with immediate success.

With the utter failure of the prior art to supply the needs of the industry, and with the many advantages proved for the mortars of the patents, it is to be expected that they would meet with resounding success in the tile-setting industry. This is exactly what happened. The products were immediately, widely, and successfully marketed by licensees of the Tile Council, they became a standard technique for setting ceramic tile, and the most widely one used, they displaced to a large extent existing techniques, they were uniformly acclaimed as supplying a long-felt need in the industry, even the individual who is president and guiding force of the defendant corporation joined in the fulsome praise accorded the products, and he followed the

* Appendix, 2a.

compliment with action by copying and marketing the products as his own.

Some 12 companies have asked for and been granted licenses to make the products since 1957 (21, 352). Sales of products by these licensees covered by the '932 patent* to and through the third (3rd) quarter of 1964 amounted to about Two Million Dollars (\$2,000,000) (353).

This is the sale of some forty-two million (42,000,000) lbs. of mortar which would set eighty-two million (82,000,000) square feet of ceramic tile (356). Savings in labor and material costs to the industry over use of the mud method for this amount of tile would be some Sixteen Million Dollars (\$16,000,000) (357).

The American Standards Association, an organization which sets quality standards for products which are in general usage in American industry, has prepared and published standards for dry set mortars (27, Exs. 6, 7).

The presumption of validity which attaches to an issued patent is strengthened by such commercial success; *Stearns v. Tinker & Rasor*, 220 F.2d 49, 58 (9th Cir. 1955); *Coleman Co. v. Holly Mfg. Co.*, 233 F.2d 71, 80 (9th Cir. 1956), *cert. denied*, 352 U. S. 952 (1956); *Neff Instrument Corp. v. Cohu Electronics, Inc.*, 298 F.2d 82, 87 (9th Cir. 1961).

* Although the Tile Council has provided its licensees with formulae including polyvinyl acetate (Ex. 55), the flexible mortar has not been widely sold by the licensees. The figures proved by plaintiff for commercial success are therefore generally confined to the '932 patent. Commercial success for the '382 patent is evident, of course, from the seven different products made and sold by defendant which were proved to infringe (R 157).

The dry set method became the most prominent technique for the installation of tile, and organic adhesives were largely replaced (161-2). Some manufacturers such as Mr. William Love of L&M Tile Products, Inc. of Dallas, Texas, a man representing the third generation of his family in the tile business, stopped producing earlier tile-setting materials and turned entirely to the production of the new products as a licensee of the Tile Council (381-84). Earlier methods of using relatively thin setting beds for the setting of tile, as described in a booklet which the Tile Council had published to the industry in 1952 (Def. Ex. Y) were very largely rendered obsolete (1397, 1434-35). The instant recognition of the product and that it drove notable predecessors from the field are important indicia of invention; *Schering Corp. v. Gilbert*, 153 F.2d 428, 431 (2d Cir. 1946).

The proof is extensive and uniform that the Tile Council's mortar development was badly needed in the industry at the time it came along, and that it fully met the existing problems. Mr. Love said the mortar of the '932 patent "was something our industry was searching for, and we found", and that it had a "tremendous" impact in the business (384). Edward McGourty, a witness called by the defendant, had been in the tile business for forty-three (43) years at all levels of employment, including business manager of the Tile Layers Union in the Los Angeles area (1214). He agreed that in 1955 there was a need in the industry for a mortar that would set dry tile on dry substrate (1239). The defendant, in the advertising of its infringing products, called the thin-set development "a revolutionary new method of setting tile" (129, Ex. 19, p. 314).

Where the method or device satisfies an old or recognized want, invention will be inferred rather than the exercise of mechanical skill; *Kaakinen v. Peelers Co.*, 301 F.2d 170, 173 (9th Cir. 1962); *Stevenson v. Lamson Corp.*, 210 F.Supp. 917, 918 (N. D. Cal. 1962). Where problems are unmet in an industry and men of ordinary skill have failed to meet them, it is evidence of invention; *Moist Cold Refrigerator Co. v. Lou Johnson Co.*, 249 F.2d 246, 253-54 (9th Cir. 1957). Tribute to the patent by major manufacturers in the industry involved is very persuasive that a patent is valid; *White v. Tak-Trak Inc.*, 140 USPQ 156, 164 (S. D. Cal. 1963).

The mortar development of the Tile Council was widely mentioned in the press of the day (25, 26, Exs. 3, 4, 5, 8), but it remained for Mr. Lester Knesel, president of the defendant, to deliver the highest encomium to the work. We quote in a footnote below at some length from an article of Mr. Knesel in the trade magazine "Tile" published in January, 1958 (Ex. 11), since we have seen no better statement anywhere of the dramatic nature of the inventions here in suit.*

* "Far back in history European craftsmen used thin coats of cement for adhering tiles. Today various thin setting bed methods are being used by Europeans extensively. In the United States, we find in patent literature, many cementitious compositions for use as thin setting beds. Some of these date back 30 years. All had many shortcomings, but the basic idea was appealing. A gypsum compound was marketed throughout the United States some 18 years ago. It had wide acceptance, but poor adhesion coupled with an adverse coefficient of expansion soon doomed this material.

"This limited start was the signal for organic adhesives to move into the field. These materials did good jobs in many instances but their wholesale use over badly prepared surfaces accounted for a lot of poor installations. However, the installing of ceramic tile by the organic adhesive method increased the use of tile many fold, by pric-

The article appeared in January, 1958 (165). The Tile Council's first licensee had received its license in April, 1957, and began to produce the products (382, 383).

Dr. Wagner, a man working very actively in the field, said he did not know of any other work than that of the Tile Council which was done along the scientific lines Knesel described to develop dry-set mortar (168). The necessary conclusion is that Knesel was paying tribute in his article to the work of the Tile Council. Mr. Knesel attended throughout the trial of the case, he listened to Dr. Wagner testify as above, he testified at length after such testimony of Dr. Wagner, and he never denied this conclu-

ing it in line with the flood of tile imitations that hit the market at the close of World War II.

"In the latter part of this period Portland cement admixed products made their appearance. Some were dry admixes, while others were wet admixes. I know that many of you are familiar with them. Some forms of these and organic adhesives are still being used very extensively today. All of these various efforts were pointing to an *ultimate cement composition* that would perform as desired.

"During this latter period, research was going on to find a cement-based product that would possess all of the properties desired for a thin set cement mortar. *Fortunately the world of chemistry was also making remarkable progress. As the researchers coupled Portland cement and modern chemicals some amazing results began to appear. Dry tiles were being set on dry backing.* Materials are now on the market embracing these principals that we are sure will be a most valuable tool in the ceramic tile industry."

* * *

"Now, our problem was to furnish a cementitious composition with these optimum conditions, adhesion, open time, shrinkage, water resistance, hardness and resilience. We are happy to state that such compositions are now available for your use. Now let's take a look at the type of reaction we encounter. *Thin Set Adhesive Mortars* can be considered dual reaction compounds. *On one side we have the water holding super adhesive phase. Now, we must balance one reaction against the other, to obtain a material with the desired workability and durability.*

"Through *valient* (sic) research it appears that most of these questions have been answered." [Emphasis supplied.]

sion. With no scientific background (Admitted Fact 28, R 92), it is clear Mr. Knesel was not describing his own work.

It seems impossible that this is the party who now contends that the thin-set dry-set mortar and method were long available to his industry in the teachings of various plaster, spackle, paint and oil well cementing patents. The explanation may be that it was several years later, in 1960, that the '932 patent issued, and the defendant was made aware that some compensation might be due for the contribution of the "ultimate cement composition" to the industry.

The Supreme Court has indicated that such evidence as here presented is very pertinent in supporting patentability.

"And, further, that the long-felt need in the industry for a device such as Scoggin's together with its wide commercial success supports its patentability. These legal inferences or subtests do focus attention on economic and motivational rather than technical issues and are, therefore, more susceptible of judicial treatment than are the highly technical facts often present in patent litigation [citing authority]. Such inquiries may lend a helping hand to the judiciary which, as Mr. Justice Frankfurter observed, is most ill-fitted to discharge the technological duties cast upon it by patent legislation [citing case]. They may also serve to 'guard against slipping into use of hindsight,' [citing case] and to resist the temptation to read into the prior art the teachings of the invention in issue."

Graham v. John Deere Co., 383 U. S. 1, 35-36 (1966).

II. THE PATENTS HAVE BEEN INFRINGED.

The findings of infringement are supported by the overwhelming weight of the evidence. The errors assigned in Defendant's Brief (p. 11) are incredible in the light of the record.

A. The Use of Dow Methocel HG Does Not Avoid Infringement.

The accused products are described in Ex. 15-1 to 15-9. In their manufacture, defendant utilized Methocel, Grade HG, purchased from the Dow Chemical Company. It had a viscosity rating of 400 centipoises or 4,000 centipoises, measured in 2% aqueous solution [Ex. 16, Defendant's Admissions 4 and 4(a)].

"Methocel" is a registered trademark of Dow Chemical Company for "methyl cellulose" (Ex. 49).

The term "methyl cellulose" is also used by Dow to describe the product referred to in its Methocel brochures as methyl hydroxypropyl cellulose (Greminger Deposition, Ex. AD, pp. 58, 62).

Dow's methyl and methyl hydroxypropyl cellulose ethers are sold under the trade name Methocel, the former being designated MC Grade, and the latter being designated HG Grade (Greminger Deposition, Ex. AD, p. 9).

In Methocel HG products, the methoxyl substitution is the major added substituent, comprising 84.0 to 93.3% of the groups added to the cellulose ring. The amount of methoxyl by weight is about in the same range for the

Methocel HG Grade as for MC Grade (Greminger Deposition, Ex. AD, pp. 94-95).

Further, the term "methyl cellulose" is also used by Dow to refer to both the simple methyl ethers of cellulose (Methocel MC) and a mixed ether of cellulose in which methyl is the predominant constituent group (e.g., Dow Methocel HG) [Greminger Deposition, Ex. AD, pp. 58, 62, 125-126].

On this record, an equivalency question is not even raised, since Dow Methocel HG used by plaintiff is *in fact* the "methyl cellulose" of the patent claims, and by defendant's own admission has a viscosity rating of 400 centipoises or 4,000 centipoises, both of which viscosities fall well within the ranges called for by the claims of both patents.

But even viewing HG Grade Methocel as a modified form of methyl cellulose, it is the full equivalent of the methyl cellulose called for by the patent claims.

Thus, Methocel HG is a water-soluble polymer which is similar in most properties to Methocel MC, but differs from methyl cellulose in that it has a high gelation temperature, a property which would not affect its ability to perform as a viscosity increasing agent in the composition of the patents in suit (106). Wagner used both MC and HG Grades of Methocel in developing his inventions (107).

Dow itself has published a brochure (Greminger Deposition Ex. 7)* which specifically prescribes the use of both

* Page 3 of this brochure is reproduced at Appendix, 6a to 7a.

Methocel HG and Methocel MC for use in practicing the inventions of the patents in suit.

On the critical feature of water-retentivity or water absorption, Methocel HG and MC have the same order of performance (Greminger Deposition, Ex. AD, p. 341).

The sacks (Ex. 67) in which the infringing products have been sold establish beyond doubt that the products are intended for the dry-setting and grouting of tile and in use function in the same way as products made under the patents in suit. Further, Mr. Knesel, defendant's President, admitted (544) that he was forced to put out his dry-set line of products by the appearance on the market of dry-set products licensed by plaintiff.

Thus, the trial court properly found that:

“* * * The HG product of Dow Chemical used by defendant is an equivalent of the methyl cellulose disclosed by the 932 patent” (Opinion, p. 3, R 129).

In a recent case of a patent dealing with whippable emulsions, the finding by a lower court that hydroxypropyl methyl cellulose was the equivalent of methyl cellulose was upheld by the Second Circuit.

“While the use of this ingredient by the appellants makes a slight technical variation from the language of Claim Four, there was sufficient support in the record for the trial court's conclusion that ‘the substituted cellulose used by the defendants is the chemical and functional equivalent of methyl cellulose and methyl ethyl cellulose, which are specifically described in the patent in suit.’ ”

Rich Products Corp. v. Mitchell Foods, Inc., 357 F.2d 176, 183 (2d Cir. 1966).

This is the identical conclusion reached by the lower court in the present case.

“The doctrine of equivalents evolved in response to this experience. The essence of the doctrine is that one may not practice a fraud on a patent. * * * a patentee may invoke this doctrine to proceed against the producer of a device ‘if it performs substantially the same function in substantially the same way to obtain the same result.’ ”

Graver Tank & Mfg. Co. v. Linde Air Products Co., 339 U. S. 605, 607-8 (1950).

The doctrine is of course followed by this Court. *Hansen v. Colliver*, 282 F.2d 66 (9th Cir. 1960).

**B. Defendant Has Produced and Sold the Dry-Set Grouts and Mortars of the Patents in Suit—
Not the Oil Well Cement Slurries of Kaveler.**

Defendant's attempt to escape the finding of infringement on the ground that he is practicing Kaveler (Ex. P) and not the patents in suit is sheer fantasy. Kaveler has nothing whatsoever to do with grouts or mortars for setting ceramic tile. It contains no recognition of the problems faced by the tile industry on the eve of the inventions. Nor does it suggest any solution to those problems, let alone the solutions embodied within the patents in suit.

Kaveler is directed to slurries for the cementing of oil wells, a problem which is unrelated to that of dry-setting and grouting ceramic tile (1261).

One advantage of Kaveler's slurry, as stated by the patent itself, is that it is a *low viscosity*, retarded set slurry (Ex. P, 3/13-16).

Although, as brought out *supra*, Kaveler describes the use of cellulose ethers in his slurries, at least one of which could be considered a modified "methyl cellulose", Kaveler's cellulose ethers must be water insoluble, since they produce no effect on the viscosity of water (1343, Ex. P, 4/19-25).

The methyl cellulose specified for use in the patents in suit is not the water insoluble form of "methyl cellulose" described by Kaveler, but the water-soluble form which is capable of exerting a tremendous increase on the viscosity of water. When defendant formulated its products, it utilized not the insoluble cellulose ether of Kaveler, which produces no change in the viscosity of water, but Methocel HG, which was capable of increasing the viscosity of water either 400 times or 4,000 times.

The degree of substitution for the alkyl and hydroxy-alkyl groups are similar in the cellulose ethers of Kaveler, as established by the formulae at the bottom of column 3, wherein the degree of substitution of the alkyl and hydroxy-alkyl groups are shown to be the same. Dr. Lacy also testified that this was so at 1226-1227.

As distinguished from such mixed cellulose ethers, the Methocel HG utilized by defendant contains predominantly methyl groups, i.e., 84.0 to 93.3% by weight of the substituent groups added to the cellulose ring are methyl groups,

the remainder being hydroxypropyl groups (Greminger Deposition, Ex. AD, p. 94).

In the light of this record, defendant cannot sustain the position that he is simply practicing Kaveler. That patent teaches directly away from the inventions of the patents in suit and the infringing products.

III. DEFENDANT COPIED.

The trial court in its opinion said that “* * * the evidence supports the inference that defendant copied plaintiff’s compositions and methods” (R 129), and found this as a fact in Finding No. 33 (R 142). The inference of the court and the finding is very amply supported by the record.

The new mortar and method were immediately and widely successful after their introduction to the commercial market in 1957 (161). L&M Tile Products, Inc. of Dallas, Texas, was licensed in April of 1957 and then started to produce the Tile Council formulas (383). Mr. Knesel admitted that he was impelled to put out his dry-set products by the appearance of other such products on the market (544). Mr. Knesel’s first commercial dry-set product was sold in October, 1957 (560).

Mr. John Schirm warehoused on the West Coast the first of the L&M licensed mortar which was shipped west of the Rocky Mountains (1105). Mr. Schirm also said (on cross-examination in correction of earlier statements) that sometime in 1956 he opened negotiations at his own instance and request with the Tile Council looking toward

the issuance of a license (1109-10). In the course of this negotiation he was furnished both with a sample of dry-set grout and with a dry-set grout formulation emanating from the Tile Council (1102). Later on, he refused to take the license offered, stating as his reasons (1102) facts at total variance with those he had stated to the Tile Council when he opened the negotiations with it (Ex. 72, 1st par. See discussion *infra*, p. 61). Mr. Schirm must be counted as a good friend of Mr. Knesel. He testified overenthusiastically (to say the least of it) at the trial for defendant.

It therefore appears that defendant had access on the open market to the L&M licensed product before defendant produced its first commercial product. Defendant also had specific access to the L&M product which Mr. Schirm warehoused on the West Coast. It also had access through Mr. Schirm to both the dry-set grout sample and the formula he had obtained from the Tile Council in the course of what the Council thought were *bona fide* negotiations for a license.

It does not tax reason to conclude that the defendant exploited one, two, or all, of these avenues to the Tile Council work.

We have already noticed above the praise Mr. Knesel lavished upon the "valiant research" of the Tile Council in 1958 prior to the issuance of the patents in suit.

Against this, defendant's Brief asserts the policy of the Tile Council to keep its developments secret. This, of course, is not inconsistent with the furnishing of samples and formulae in confidence to negotiate license agreements, and the marketing of licensee's products.

Defendant also asserts (Brief, p. 46) that in January, 1958, it was not known that sand or limestone was a necessary ingredient of the mortar, citing page 22 of the file history, Ex. AB. This page of the file history does *not* carry the quotation defendant makes. Instead, that page directly rebuts defendant's statement, because applicant there reviews for the examiner the pending claims in the case, including numerous mortar composition claims which include sand or limestone. The fact is that there were numerous such claims in the application at and after filing of the application on September 30, 1957, and Dr. Wagner as of that time appreciated the essential nature of sand and limestone in the invention which was patented (1441).

Contrary to defendant's contention, the accused products could have been copied from those commercially launched by the Tile Council, and it is submitted that the evidence overwhelmingly supports the court's conclusion that they were. Adoption of the patented device by the defendant is evidence of invention; *The Troy Co. v. Products Research Co.*, 339 F.2d 364, 367 (9th Cir. 1964); *Steven-son v. Lamson Corp.*, 210 F. Supp. 917, 918 (N. D. Cal. 1962).

IV. THERE WAS NO FRAUD.

The argument of defendant is based upon assertedly conflicting statements of the patent solicitor made at pages 25 and 35 of the file history (Ex. AB) of the '932 patent. Defendant is unsupported by the facts. Both statements are true.

The solicitor at page 35 of the file history said "The results [of shear bond tests submitted to the examiner]

clearly demonstrate that the inclusion of sand or limestone is necessary for proper functioning of the present invention''. This statement is true. The tests did show a very substantial advantage in bond strength in setting vitreous tiles with a composition of Portland cement, sand or limestone, and methyl cellulose, over similar mortars without sand or limestone. The "present invention" to which the solicitor was referring was that covered by the claims then pending, which were the very claims later issued in the patent. These claims cover compositions of Portland cement, sand or limestone, and methyl cellulose. The statement was in all respects true.

In the second statement at page 25 of the file history, the solicitor was distinguishing over the references Ruthman et al. and Heijmer. He pointed out that the Ruthman patent did not teach Portland cement and that "Heijmer's plasters must contain chalk and may also contain pumice''. He went on to make the statement that "They are not intended as mortars for setting tile or masonry and are not usable as such''.

Defendant's elaborate argument of falsity in this statement is based upon the premise that "The Council's expert established the identity of 'chalk' and 'limestone' " (Brief, p. 28). This premise is not true, and the defendant's entire position falls with it.

Dr. Lacey testified only that chalk and limestone are similar to the extent that "chemically" they are both essentially calcium carbonate (288-89). But, Dr. Lacey did not testify that chalk and limestone are physically equiva-

lent for use in a mortar, and the record is clear that they are not. Chalk is not physically suitable as the grained aggregate in the Wagner mortar, and Heijmer with a large percentage of chalk would not give the mortar of the invention.

Dr. Wagner, in speaking of the composition of the mortar, uniformly referred to the use of a "grained aggregate". "I used a porous *grained* aggregate, such as sand or limestone" (63). "In some of its aspects it (the '382 patent) involves also the addition of sand, limestone or other *grained* type of aggregate" (93). "The '932 patent dealt with cement, methyl cellulose and a *grained* aggregate such as sand or limestone as a composite composition" (193).

The mechanism of the use of such grainy material as sand in the mortar was explained by Dr. Lacey.

"If you add to this mixture *granular material*, inert material, *like sand*, the Portland cement particles are wetted—Portland cement particles surround the *sand grains* and fill in the interstices between the *sand grains* which are rigid, and in this way the shrinkage of the cement can occur without pulling particles apart, because the shrinkage can take place in *the interstices between the sand particles* rather than between the sand particles themselves" (287).

The effect of limestone called for by the patent would be similar, he said (287-88).

Dr. Lacey further testified that materials with particle sizes greatly smaller than sand would not be used in the

mortar. This would be true of titanium dioxide which would have a very fine particle size.

“Q. Would this act like sand in a cement mix, if you know? A. No. Sand would be of a *different particle size* and therefore they would not be equivalent, unless they were of *the same particle size*. Because these materials are inert, and therefore *they would be only equivalent when of comparable particle size*” (343-44).

Chalk is not similar in particle size to sand, by common knowledge. As a matter of fact, the Heijmer patent speaks of “suspended chalk” (Ex. J, 1/80), which means chalk of such fineness as will remain suspended in water. This certainly is not material of the particle size of sand aggregate usable in mortar for the purpose shown above.

Dr. Wagner indicated that only small percentages of carefully chosen ingredients might be added to his combination of cement, methyl cellulose and aggregate and still retain its identity (198-99). Certainly large amounts cannot be added within the claim definition which calls for a dry mortar composition which “consists essentially” of those three ingredients. The Heijmer Example 2, even assuming it otherwise taught a Wagner mortar composition, which it clearly does not, in calling for “10-30 parts chalk” would include far too much extraneous material to qualify.

All statements to the Patent Office were true, and defendant’s charge of fraud is entirely contrived. The record is utterly devoid of the intentional misrepresentations but for which the patent would not have issued, which defendant must prove by clear, unequivocal and convincing evi-

dence, to justify its charge of fraud. *Baldwin-Lima-Hamilton Corp. v. Tatnall Meas. Sys. Co.*, 169 F.Supp. 1, 25 (E.D. Pa. 1958), aff'd 268 F.2d 395, cert. den. 361 U. S. 894.

The defendant's argument, based upon a fatally defective premise, is further characterized by errors which we are obliged to correct.

At page 25, and again on page 27, of the brief, defendant asserts that Dr. Lacey admitted that Heijmer disclosed a formula within the scope of the patent in suit. This is not true. Dr. Lacey specifically denied it.

"Example 2 calls for ethyl cellulose. And if that is the case, that would not fall within the scope of the patents in suit, being a relatively insoluble cellulose ether instead of a soluble cellulose ether." (1375)

Dr. Lacey also denied that ethyl cellulose, the material specified in Example 2 of Heijmer, is the equivalent of methyl cellulose: "I don't think the two are equivalent * * *" (1376). There is no justification whatever for defendant's statement that "The patent then proceeds to give two exemplary recipes, one of which falls within the range of the suit patent as stated by the Council's patent expert:" (Brief, p. 27).

Immediately following this statement on page 27 of the brief, defendant says: "Facing the formidable teachings of the Heijmer reference, in prosecuting their patent, the Council eliminated recitations of 'chalk' and 'limestone' from the claims then being urged, and argued:" This quoted passage from the brief is also not true. At this time (Ex. AB, p. 21) there were pending in the application

some 9 claims which included in the claimed composition sand or limestone, or limestone alone. (Claims 1, 5, 10, 12, 13, 14, 15, 17, 21, Ex. AB, pp. 14-17). The claims presented to the Patent Office never included a reference to chalk, and no recitation of limestone was eliminated from the claims at that or any other time. The statement and the argument it makes is complete fiction.

At the bottom of page 27 and top of page 28 of the brief is the assertion that sand or limestone was added to the claims, inferring a change of position by the applicant. This is not true. As shown above, numerous claims were present in the application throughout the prosecution which included sand or limestone in the composition.

It is submitted that the defendant's charge of fraud is so spectacularly baseless, as to do the defendant no credit whatever.

V. THE AWARD OF COSTS AND CONSIDERATION OF MULTIPLE DAMAGES ARE FULLY JUSTIFIED.

The Court below gave the Master permission to recommend the increase of damages up to three (3) times the amount found or assessed under 35 *U. S. C.* §284* on the basis both of "the willful, intentional and deliberate infringement by defendant and the inequity in its defense" (Conclusion of Law 41, R 162). Both of these grounds were present in this case, and either would be sufficient to base the Court's award.

We have already shown that the Court's finding of willful and deliberate infringement is fully justified on the

* Appendix, 5a.

record. Multiple damages could have been awarded on this basis alone; *Coleman Company v. Holly Mfg. Co.*, 269 F.2d 660, 666 (9th Cir. 1959); *Solex Laboratories v. Graham*, 165 F.Supp. 428, 437 (S. D. Cal. 1958); *British Laboratories v. Schenley Laboratories*, 117 F.Supp. 67, 81 (S. D. Ind. 1953).

Inequitable conduct in connection with the trial also is a proper basis for the award of multiple damages; *Grant Paper Box Co. v. Russell Box Co.*, 106 F.Supp. 616, 619 (D. Mass. 1952), aff'd 203 F.2d 177. See *Young v. General Electric Co.*, 96 F.Supp. 109, 141 (N. D. Ill. 1951). And, there assuredly was more than enough of that ingredient in the present case.

The trial court found that "very serious discrepancies in statements of fact existed in the testimony given" by four (4) witnesses testifying on behalf of the defendant (Finding of Fact 55, R 149). The defendant put on twelve (12) persons in all, so that the truthfulness of one-third ($\frac{1}{3}$) of all witnesses produced was seriously compromised. Without attempting to review the extensive record which justified the Court's Finding 55, which has not been questioned in defendant's brief, we will point out the gravity of this activity at the trial.

Lester M. Knesel, president of defendant purported to give a physical demonstration to the Court of the solubility, and usability in mortar, of ethyl cellulose. This was designed to establish the reference Heijmer as an anticipation to invalidate the '932 patent (even though the Patent Office had considered and discarded the reference). On cross-examination, Mr. Knesel admitted he was *not* using ethyl cellulose, which he knew to be *insoluble* in water, but "To

be real true'' he was using hydroxyethyl cellulose, a soluble material (R 150).

This was testimony at the very heart of the case aimed at destruction of plaintiff's patents, and the testimony was knowingly false.

Mr. Paul E. Matheny, chief chemist for a chemical testing laboratory in Los Angeles, rendered a report to defendant for the purpose of this litigation. The testimony and the report left the impression that Matheny had derived certain formulations given in the report from prior art patents. It developed on cross-examination, however, that the formulae were *not* shown in the prior art patents, but had been prepared by Mr. Matheny in collaboration with Mr. Knesel. The trial court, hearing the testimony and observing the witness, said that the testimony "is hardly a true statement of fact", and that "It is objectionable for Mr. Matheny to testify in this fashion" (R 151).

This was false proof aimed also at the core issue in the case, and perpetrated by a kind of scientific witness upon which courts frequently must place reliance in cases of this kind.

George N. Lavenberg gave testimony designed to show that mortar made by a licensee of plaintiff had been responsible for a serious tiling failure in the beautiful Department of Water & Power Building which, at the time of trial, was just being completed on the hill in Los Angeles Civic Center. It turned out on cross-examination, however, that a written report of Mr. Lavenberg which he had made prior to his appearance at the trial and which he thought was not avail-

able to plaintiff (1003), did not attribute the failure to the mortar, and another witness produced by defendant testified that there was in fact no failure of the mortar (R 151, 152).

This deceitful testimony of Mr. Lavenberg was aimed at neutralizing the overwhelming and otherwise unanimous proof of utility, commercial success and trade acclaim which attended the inventions.

Mr. John Schirm also was called by defendant to testify in derogation of the patented products. He said he had been approached by the Council asking him to take a license, that he was furnished a sample, and that he rejected the license because "we had developed the technology to a farther (*sic*) extent" (1102).

On cross-examination, however, Mr. Schirm was obliged to recant, and to admit that he had in fact first solicited a license from the Tile Council (1109), having done so in his letter of April 12, 1956, to the Research Director of the Council (Ex. 72) in these words:

"We have followed your work in the development of a new tile grout and feel that an important contribution to the industry has been achieved. We are anxious to participate in the commercial development of the product."

Mr. Schirm's testimony-in-chief thus included a totally false attack upon the utility of plaintiff's product.

It is submitted that the record fully supports the conclusion of inequitable conduct on the part of defendant, and

the court below did not abuse its discretion. See *Talon, Inc. v. Union Slide Fastener, Inc.*, 266 F.2d 731, 739 (9th Cir. 1959). This alone could serve as a reason for the award of multiple damages. The award of costs usually follows the finding of infringement, and surely cannot be questioned in this case.

CONCLUSION

It is respectfully submitted that no error has been shown in the proceedings of the trial court, and that the judgment should be affirmed in all respects.

Respectfully submitted,

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APPENDIX

TABLE OF EXHIBITS

	<i>Identified</i> <i>Identified</i>	<i>Offered</i> <i>Offered</i>	<i>Received</i> <i>Received</i>
Ex. 1	14	14	14
Ex. 2	14	14	14
Ex. 3	26	26	26
Ex. 4	26	26	26
Ex. 5	26	26	26
Ex. 6	28	28	28
Ex. 7	28	28	28
Ex. 8	26	26	26
Ex. 11	164	164	164
Ex. 16	99-100	100	100
Ex. 19	132	132	132
Ex. 30-4	78	78	79
Ex. 30-5	78	78	79
Ex. 30-6	78	78	79
Ex. 30-7	78	78	79
Ex. 49	398	398	400
Ex. 67	144	144	144
Ex. 72	1108	1110	1110
Ex. F	475	475	475
Ex. G	475	475	475
Ex. J	475	475	475
Ex. P	475	475	475
Ex. Y	479	479	479
Ex. AB	485	485	485
Ex. AD	904	904	904
Greminger			
Dep. Ex. 6	904	904	904
Greminger			
Dep. Ex. 7	904	904	904
Ex. BK	855	861	861
Ex. ZZ	485	485	485

*Appendix***Excerpts from Patent Statute, 35 U. S. C.****§100. Definitions**

When used in this title unless the context otherwise indicates—

(a) The term “invention” means invention or discovery.

(b) The term “process” means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.

(c) The terms “United States” and “this country” mean the United States of America, its territories and possessions.

(d) The word “patentee” includes not only the patentee to whom the patent was issued but also the successors in title to the patentee.

§101. Inventions patentable

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

§102. Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication

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in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States, or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or

(f) he did not himself invent the subject matter sought to be patented, or

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

*Appendix***§103. Conditions for patentability; non-obvious subject matter**

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

§282. Presumption of validity; defenses

A patent shall be presumed valid. Each claim of a patent (whether in independent or dependent form) shall be presumed valid independently of the validity of other claims; dependent claims shall be presumed valid even though dependent upon an invalid claim. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting it.

The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded:

(1) Noninfringement, absence of liability for infringement, or unenforceability,

(2) Invalidity of the patent or any claim in suit on any ground specified in part II of this title as a condition for patentability,

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(3) Invalidity of the patent or any claim in suit for failure to comply with any requirement of sections 112 or 251 of this title,

(4) Any other fact or act made a defense by this title.

In actions involving the validity or infringement of a patent the party asserting invalidity or noninfringement shall give notice in the pleadings or otherwise in writing to the adverse party at least thirty days before the trial, of the country, number, date, and name of the patentee of any patent, the title, date, and page numbers of any publication to be relied upon as anticipation of the patent in suit or, except in actions in the United States Court of Claims, as showing the state of the art, and the name and address of any person who may be relied upon as the prior inventor or as having prior knowledge of or as having previously used or offered for sale the invention of the patent in suit. In the absence of such notice proof of the said matters may not be made at the trial except on such terms as the court requires. (Amended July 24, 1965, Public Law 89-83, sec. 10, 79 Stat. 261.)

§284. Damages

Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court.

When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed.

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The court may receive expert testimony as an aid to the determination of damages or of what royalty would be reasonable under the circumstances.

Exhibit 7 to Greminger Deposition, AD, Page 3

Dry, powdered Methocel product may be conveniently added to a ball mill when it is charged. Wet milling for several hours will be sufficient to attain complete water solution of the particles.

Because of the surface activity of Methocel products, foaming is occasionally a problem and may be controlled by the use of a defoamer such as Dow polyglycol P-1200. A ration of two parts polyglycol to one part of Methocel powder is ordinarily effective. Occasionally, incorporation of a Methocel product retards the drying rate of the applied glaze. This may be compensated for by reducing the water content of the mix or by replacing part of the water with alcohol.

Tile Mortar and Grout***Advantages***

High viscosity Methocel products are uniquely useful as water retention agents which make possible certain patented methods for installing ceramic tile.*

Older methods of installing such tile required pre-soaking. Unless this was done, the porous tile absorbed water from the Portland cement and prevented proper curing. The result was a mortar with poor adhesion and a grout which exhibited shrinking and cracking.

* U. S. Patents 2,820,713, 2,838,411, 2,934,932, 2,959,489 and 2,990,382, H. B. Wagner (to Tile Council of America) 1958.

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With the incorporation of a Methocel product, these difficulties disappear. Methocel products possess excellent water retention properties combined with complete non-reactivity toward Portland cement. The mortar produced has excellent plasticity. Its strength is exceptional, and a 1/16 inch application offers the possibility for a substantial reduction in application costs over the use of a 1/2 inch bed of conventional mortar reinforced with steel mesh. No pre-soaking is required. Grout made with a Methocel product likewise forms good solid joints without pre-soaking.

Use Information for Tile Mortar and Grout

Methocel MC, 4000 cps., or Methocel 65HG, 4000 cps., are generally used in this application at concentrations from 0.25 to 2.25 per cent, based on the weight of Portland cement in the slurry. With higher viscosity materials, lower concentrations are required.

Building Products

In related building products such as joint cement, patching plaster, latex cements and others, Methocel products are used to give increased "open time," improved workability and when required, added viscosity. The thermal gelation properties of solutions of Methocel can be used to advantage to prevent sagging or dimensional instability problems encountered when compositions are extruded or formed into specific shapes.

NOTICE

The information in this bulletin is presented in good faith, but no warranty is given nor is freedom from any patent owned by The Dow Chemical Company or by others to be inferred.

*Appendix***Defendant's Memorandum of Contentions of Law
and Fact—Part III, Pages 15-18****III. Exhibits Expected to be Offered.****A. To Invalidate Patent 2,934,932.**

1. On the basis of prior publications.
 - a. U. S. Patent 2,700,615 (1955) "Plaster Composition"
 - b. U. S. Patent 2,600,018 (1952) "Portland Cement Base Points"
 - c. U. S. Patent 2,583,657 (1952) "Low Water-Loss Cement and Process of Making"
 - d. Publication "Genuine Clay Tile" Copyrighted 1952 by Don Graf sold by Tile Council of America
 - e. British Patent 714,252 (1954) "Improvements in or Relating to Cementitious Compositions"
2. On the basis of prior use and sale #1.
 - a. The deposition of Mr. L. E. White taken in this case, along with all exhibits therein.
 - b. The deposition of Mr. C. E. Kaiser taken in this case, along with all exhibits therein.
3. On the basis of prior use and sale #2.
 - a. Invoice from Gehling Printing and Lithography of August, 1957, for printing on thin set materials.

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- b. Invoice copies from Braun Chemical Company showing purchase of "Methocel HG" in September, 1956.
 - c. Mix records of defendant to Support dates of mixing dry mixes.
 - d. Defendant invoice to Dr. I. V. Fitzgerald dated September 24, 1957.
 - e. Master Tilers documents of an early public use of.
- 4. On the basis of the patent prosecution record.
 - a. The file wrapper of United States Patent 2,934,932 along with all references cited.
 - 5. On the basis of misleading statements to the Patent Office.
 - a. Records of tests with mortar containing sand and mortar containing no sand.

B. Publications Illustrative of the Prior Art Relative Patent 2,934,932.

- a. British Patent 715,032 (1954)—"Method and Composition for The Formation of Concrete Masses."
- b. United States Patent 2,427,683
United States Patent 2,423,971
United States Patent 2,580,565

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United States Patent 2,598,675

United States Patent 2,614,634

United States Patent 2,629,667

United States Patent 2,655,004

United States Patent 2,662,064

United States Patent 2,672,937

United States Patent 2,673,810

United States Patent 2,699,401

- c. Pages 177-178 of "Modern Plastics Magazine"—October, 1951.
- d. Dow Chemical Publication entitled "Methocel News"—published 1953.
- e. Pages 97, 98 and 99 of Swedish Magazine BYGG-MASTAREN, Volume 33B, 1954 and translation.
- f. "TILE TIPS AND TOPICS" Published by the Tile Council of America, issues of February, 1953, July, 1954 and June, 1955.

C. To Invalidate Patent 2,990,382.

1. On the basis of Prior Publications.

- a. United States Patent 2,800,463 (1957) "Polyvinyl Acetate Powder and Process of Making Same."

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- b. British Patent 714,252 (1954)—“Improvements in or relating to Cementitious Compositions” (Mortar with methyl cellulose and polyvinyl acetate).
 - c. United States Patent 2,733,995 (1956) “Polyvinyl Acetate Cement Compositions.”
2. On the basis of prior use and sale.
- a. Invoice #801—426 showing purchase by Cala-Tile Co. of Vinac RD powder from Braun Corporation.
 - b. Invoice #830,241 showing purchase by Cala-Tile Co. of Polyvinyl Acetate Powder-Vinac RD from Braun Corporation.
 - c. Correspondence from Air Reduction Chemical and Carbide Company to establish that Vinac RD powder sold in August and September was spray dried polyvinyl acetate.
 - d. Invoice copies from August and September of Ceramic Tilers Supply showing sales of dry mixes during those months.
3. On the basis of the patent prosecution record.
- a. The File Wrapper of United States Patent 2,990,382.

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**D. Publications Illustrative of the Prior
Art Relative Patent 2,990,382.**

- a. British Patent 743,952 (1956) "Improvements
in or Relating To Coating Composition Contain-
ing Synthetic Resin".

E. To Establish No Infringement.

- a. Technical Analysis by Dow Chemical Co. of their
product "Methocel HG".

NILSSON & ROBBINS
By Byard G. Nilsson
Attorney for Defendant

Certificate

I certify that, in connection with the preparation of this brief, I have examined Rules 18, 19 and 39 of the United States Court of Appeals for the Ninth Circuit, and that, in my opinion, the foregoing brief is in full compliance with those Rules.

JAMES E. BIAVA

